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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,509	06/07/2002	Hidetoshi Yokota	Q68269	4003

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EXAMINER

MCCALL, ERIC SCOTT

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,509

Applicant(s)

YOKOTA ET AL.

Examiner

Eric S. McCall

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 19-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 25-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

VEHICLE RUNNING STATE ESTIMATION
METHOD AND APPARATUS, VEHICLE
CONTROL APPARATUS AND TIRE WHEEL

FIRST OFFICE ACTION ON THE MERITS

PRIORITY

Acknowledgment is made of the Applicant's claim for foreign priority based on an application filed in Japan on June 23, 2000. It is noted, however, that the Applicant has not filed a photocopy of the certified copy of the said application as required by 35 U.S.C. 119(b).

ABSTRACT

The abstract of the disclosure is objected to because of the use of the legal phraseology "means" and because the abstract is not limited to a single paragraph. Correction is required. See MPEP § 608.01(b).

SPECIFICATION

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. The Applicant's cooperation is requested in correcting any errors of which the Applicant may become aware of in the specification.

CLAIMS

35 U.S.C. § 112

Claims 1-18 and 25-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention because said claims contain numerous phrases which lack antecedent basis. The following serves as an example of just some of the phrases of some of the claims:

Claim 1, line 3; "the vibration level";
 line 4; "the spring";
 line 5; "the condition of a road";
 lines 6/7; "the running state of each tire";
 line 7; "the detected vibration level";

Claim 2, lines 2/3; “the waveform of time changes”;
Claim 3, line 2; “the frequency”;
Claim 4, line 8; “the computed value”; and
Claim 5, lines 4/5; “the vibration transmission level”.

The Examiner points out that the remainder of the claims are replete with phrases which also lack antecedent basis. The Applicant is asked to thoroughly review said claims and amend said phrases.

Furthermore claim 1 is indefinite because said claim is directed to a vehicle running state estimation method however the phrase “at least one of” in line 5 does not require the running state of the vehicle to be estimated but instead the condition of a road surface. Thus, the preamble of the claim sets forth a claim which is directed to estimating a vehicle running state but the body of the claim sets forth a road surface condition estimation.

Independent claims 6, 8, 9, and 10 are indefinite because the preamble of said claims are directed to a vehicle running state estimation apparatus, however, the body of the claims set forth a road surface condition estimation means and not a vehicle running state estimation apparatus.

Claim 27 is indefinite due to use of the alternative language therein as to whether said claim depends from claim 6, and thus includes the limitations thereof, or if said claim is that of an independent claim.

35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, 8-11, 27, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Hodges, Sr. et al. (5,065,618).

With regards to claim 1, Hodge, Sr. et al. teach a vehicle running state estimation method comprising the steps of:

detecting a vibration level of a portion below a spring of a running vehicle (col. 11, lines 65/66); and

estimating “at least one of” a condition of a road surface on which the vehicle is running (col. 12, lines 3-5) and a running state of each tire based on a detected vibration level to estimate the running state of the vehicle.

With regard to claims 3 and 4, the prior art suggests a frequency of the detected vibration level being analyzed to calculate a vibration level at a predetermined frequency band (col. 12, lines 9-13) and a road surface condition is estimated from the level (col. 12, lines 14-17).

With regards to claim 5, the prior art suggests the claimed subject matter thereof due to the comments made above in combination with fig. 1 of the prior art which shows vibration sensors on more than one wheel of said vehicle.

With regards to claim 8, Hodges, Sr. et al. teach a vehicle running state estimation apparatus comprising:

means of detecting a vibration level of a portion below a spring of a running vehicle (col. 11, lines 65/66);

means of calculating a vibration level at a predetermined frequency band by analyzing a frequency of the detected vibration level (col. 12, lines 29-68); and

road surface condition estimating means for estimating a condition of a road surface on which the vehicle is running (col. 12, lines 3-5) from a calculated vibration level.

With regard to claims 9 and 10, and in addition to above comments, the prior art teaches at least two vibration levels at different frequency bands by analyzing the frequency of said levels (ie. the prior art teaches in col. 13, lines 4-8 that each wheel of the vehicle is separately

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measured which is thus interpreted as each wheel has it's own unique vibration level/frequency band measurement even if the vibration/frequency is the same for each wheel).

With regards to claim 11, the suspension spring of the vehicle in the prior art (explicitly shown in fig. 2) is interpreted as the vibration buffer as claimed.

With regards to claim 27, said claim has been interpreted as an independent claim due to the alternative language as used therein wherein the prior art teaches a vehicle control apparatus comprising vehicle control means for controlling a running state of a vehicle based on a running state of each tire (col. 11, lines 12+).

With regards to claim 28, the prior art suggests the claimed subject matter thereof (col. 11, lines 67+).

Allowable Subject Matter

Claims 6, 7, 16-18, 25, 26, and 34-39 are believed to be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action. A final determination can be given once said claims are deemed definite.


Claims 2, 12-15, and 29-33 are believed to be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. A final determination can be given once said claims are deemed definite.

RELEVANT ART

The Applicant's attention is directed to the enclosed "PTO-892" form for the prior art made of record and not relied upon but considered pertinent to the Applicant's disclosure.

CONCLUSION

Any inquiry concerning this communication should be directed to Eric S. McCall at telephone number (703) 308-6968.


Eric S. McCall
Primary Examiner
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Oct. 07, 2003